

REMARKS

Claims 1-12, 14, 15, 25, 29, 30, 44-46, and 73-95 are pending. The claims have been rejected under 35 U.S.C 103(a) as follows: (1) Claims 1-10, 12, and 74-84 have been rejected as being unpatentable over Konstantin (U.S. Patent No. 6,164,024); (2) Claim 11 has been rejected as being unpatentable over Konstantin in view of Bezner (U.S. Patent No. 4,998,395); (3) Claims 14-15, 25, 29-30, 85-87, and 90-95 have also been rejected as being unpatentable over Konstantin in view of Bezner; and (4) Claims 44-46, 73, and 88-89 have been rejected as being unpatentable over Bezner.

Claims 1, 14, 44, 90, and 94 have been amended, as addressed below. In addition, Claims 7-9, 11, 45, 46, 80, and 88 have been amended to make minor, typographical corrections.

Applicant respectfully submits that the claims, as amended, are allowable over the references cited by the Examiner. Therefore, in view of the amendments and the following remarks, Applicant respectfully requests reconsideration and allowance of this application.

CLAIMS 1-10, 12, AND 74-84

Applicant has amended Claim 1 to clarify the limitations of the claim. More specifically, Applicant has amended independent Claim 1 to clarify, among other things, that: (a) the internal connector loosely engages the glazing panels to allow expansion and contraction of the glazing panels due to temperature and normal wind conditions and to retain the glazing panels against separation from the retention clip under high wind conditions; (b) the external connector flexes to allow expansion and contraction of the glazing panels due to temperature and normal wind conditions and substantially sealingly engages the glazing panels to protect covered elements; (c) the retention clip, internal connector, and external connector are three discrete and separable bodies; (d) the internal connector engages the upstanding seam flanges and

covers the seam defined therebetween; and (e) the external connector is not in engagement with the upstanding seam flanges. Applicant respectfully submits that independent Claim 1, as amended, and dependent Claims 2-10, 12, and 74-84, which incorporate the limitations of Claim 1, are not obvious over Konstantin.

An example of an embodiment disclosing these limitations is shown in FIG. 1 of the application. FIG. 1 discloses a discrete and separable internal connector 20, external connector 22, and retention clip 18. The internal connector 20 engages inner upstanding seam flanges 14 and covers the seam defined therebetween. The external connector 22 is not in engagement with the inner upstanding seam flanges 14. The use of the claimed internal connector and clip have been found to provide much higher performance in resisting severe wind loads than previous systems.

Konstantin is generally directed, as shown in FIG. 13, to a glazing panel system in which adjacent glazing panels 12 are held by a retention clip 7 to an underlying purlin 24. The glazing panels 12 are joined at upstanding seam flanges 14 by a single joining connector 22, which is snap-fit over the seam flanges 14. Konstantin discloses only a single joining connector 22; it does not disclose two separate connectors, *i.e.*, an internal connector and an external connector. In Konstantin, the wind load resistance depends heavily on the retentive action of the clip 7 alone, and as such, the performance of the system is more limited than a system utilizing the retentive action of both the clip and an internal connector.

In one form, as shown in FIG. 12, Konstantin discloses a clip 58 having right and left upper flange portions 62a and 62b, which are integrally joined to the remainder of the clip 58. These flange portions are a part of the clip body and are not separable from the clip 58. The flange portions 62a and 62b have downwardly-inclined edges 72 and ends 74 that abut and hold the batten 70 down. These flange portions 62a and 62b extend outwardly away from the seam, *i.e.*, they do not cover the seam. They also are not intended to provide an inward force to retain the panels. Instead, they extend

downwardly to engage the batten 70 to provide a downward force against the batten 70. (Col. 11, lines 7-17.)

Konstantin does not disclose the structural relationship of the retention clip, internal connector, and external connector to one other and to other parts of the glazing panel system, as recited in Claim 1. First, Konstantin does not disclose a separate retention clip, internal connector, and external connector. Instead, the flanges portions 62a and 62b are an integral part of the clip 58. Second, Konstantin does not disclose an internal connector that covers a seam defined between upstanding seam portions. Instead, the flange portions 62a and 62b extend outwardly away from, and do not cover, the seam. Third, Konstantin does not disclose an external connector that is not in engagement with upstanding seam flanges. Instead, Konstantin discloses a batten 70 in engagement with the seam flanges 14. Fourth, Konstantin does not state that the flange portions 62a and 62b of the clip 58 are intended to retain the glazing panels inwardly against the clip 58 to prevent the clip 58 from acting like a hinge (see FIG. 7 of application). Instead, Konstantin states that the flange portions 62a and 62b are intended to engage and push downwardly against the batten 70. (Col. 11, lines 7-17.)

Konstantin does not disclose or make obvious the limitations recited in Claim 1, which are directed to a different way of retaining glazing panels. Claim 1 requires three discrete elements, *i.e.*, a retention clip, internal connector, and external connector, having certain structural relationships in order to perform different functions. For example, the retention clip is configured to engage and retain adjacent glazing panels against a support member. The internal connector loosely engages the glazing panels to allow expansion and contraction but is strong enough to prevent separation of the glazing panels under very high winds. The external connector is flexible to allow expansion and contraction of the glazing panels but substantially sealingly engages the glazing panels to provide weatherproofing protection to the covered elements. The

structural relationship of these elements allows the claimed system to sustain a very high wind load that previous systems cannot.

In addition to retaining the panels and weatherproofing, the connectors are structurally configured to allow movement of the glazing panels. If movement of glazing panels is not allowed, the panels become stressed and non-functional. Konstantin does not disclose or suggest these claimed elements and structural relationships to perform all of these functions.

Accordingly, independent Claim 1 and dependent Claims 2-10, 12, and 74-84 are not obvious over Konstantin.

CLAIM 11

In the Office Action, it was acknowledged that Konstantin did not disclose panels having a pair of spaced upstanding seam portions and did not disclose an internal connector being an inverted channel with depending legs positioned between upstanding seam portions, as recited in Claim 11. Claim 11, however, was rejected as obvious over Konstantin in view of Bezner. As discussed below, Applicant respectfully submits that Konstantin and Bezner do not teach all of the limitations of Claim 11, and there is no motivation to combine their teachings to arrive at the limitations of Claim 11.

Bezner is directed generally to a panel unit in which two panels may be joined by a joining member 18, as shown in FIG. 4. Each panel has two upstanding projections 10 and 12 at each end having inwardly-directed detent means 16, which engage a rail portion 22 of the joining member 18. Each rail portion 22 has outwardly-directed detent means 24 for engagement with the inwardly-directed detent means 16. Bezner discloses a single joining member 18; it does not disclose a retention clip and multiple connectors, such as an internal and external connector.

Initially, Applicant notes that Claim 11 is dependent from independent Claim 1. Claim 11 therefore incorporates the amended limitations addressed above. Applicant

respectfully submits that Claim 11 is not obvious in view of these amended limitations. Significantly, Bezner does not disclose elements corresponding to a retention clip, internal connector, and external connector. Accordingly, like Konstantin, Bezner does not disclose or suggest the structure and structural relationship of the retention clip, internal connector, and external connector to each other and to other parts of the claimed glazing panel system.

Applicant further respectfully submits that combining the references does not teach all of the limitations recited in Claim 11. Konstantin is directed generally to a glazing panel system in which adjacent panels are held by a retention clip against a support member and in which upstanding seam flanges are joined by a single connector. Bezner is directed generally to a panel system in which adjacent panels each have two upstanding projections and a joining member with two depending portions to be inserted and interlock between each pair of upstanding projections. At best, combining Konstantin and Bezner only teaches the use of a single connector/joining member with depending portions that interlock between two upstanding projections.

Applicant therefore respectfully submits that combining Konstantin and Bezner does not teach the use of two connectors and neither reference addresses the combination of problems solved by the use of two connectors. The use of two connectors in the claimed manner addresses the problems of accommodating the expansion and contraction of the glazing panels due to temperature and normal wind, retaining of the panels due to high wind, and providing weatherproofing. Neither Konstantin nor Bezner addresses the use of a relatively strong internal connector that prevents separation of adjacent panels in combination with a relatively flexible external connector that provides weatherproofing. The use of two different connectors in the claimed manner allows each to be used effectively for different purposes, which is not possible with the single connector disclosed in Konstantin and Bezner.

Bezner is not directed in any way to addressing concerns related to expansion and contraction of glazing panels, retention of the panels against high winds, or weatherproofing. Instead, Bezner addresses the concern of reducing the height of stacked panel units to reduce storage and shipping costs. (Col. 1, lines 13-23.) In addition, Bezner addresses the concern of improving insulation characteristics of the panel unit by disclosing a double-pane structure. (Col. 3, lines 7-25.) In light of these stated concerns, there is no motivation to combine this reference with Konstantin or to modify it to arrive at the limitations of Claims 11.

Accordingly, Claim 11 is not obvious over Konstantin in view of Bezner.

CLAIMS 14-15, 25, 29-30, 85-87, AND 90-95

Applicant has amended Claims 14, 90, and 94 to clarify the limitations of the claims. More specifically, Applicant has amended: (1) independent Claim 14 to clarify that the seam covering member engages the pair of outer seam flanges and covers both pairs of inner and outer seam flanges; (2) independent Claim 90 to clarify that the external channel connector engages the second upstanding seam flanges and covers both pairs of first and second upstanding seam flanges; and (3) independent Claim 94 to clarify that the outer seam flanges are configured to interlock with an external connector for covering the inner and outer seam flanges. Applicant respectfully submits that Claims 14, 90, and 94, as amended, and dependent Claims 15, 29-30, 85-87, 91-93, and 95, which incorporate the limitations of Claims 14, 90, and 94, are not obvious over Konstantin in view of Bezner.

Neither Konstantin nor Bezner (nor the combination thereof) disclose, teach, or suggest all of the limitations recited in amended Claims 14, 90, and 94. As acknowledged in the Office Action, Konstantin does not disclose both inner and outer seam flanges, and therefore, it does not teach or disclose a seam covering member/external connector that engages the pair of outer/second seam flanges, as

recited in Claims 14, 90, and 94. Further, neither reference teaches, discloses, or suggests a seam covering member/external connector covering both pairs of inner and outer/first and second seam flanges, as recited in Claims 14, 90, and 94. At best, the references disclose a seam covering member/external connector that only covers the inner/first seam flanges. Thus, all of the limitations of Claims 14, 90, and 94 are not taught by the combination of references, and Claims 14, 90, and 94 are patentable over them.

Further, as addressed above, the combination of Konstantin and Bezner, at best, discloses a glazing panel system using a single connector/joining member with depending portions that interlock between two upstanding projections. The combination does not teach the use of an internal connector and an external connector and their relationship to other components of the glazing panel system, as incorporated and recited in Claims 15, 90, and 94. Accordingly, for this additional reason, as addressed above, Claims 15, 90, and 94 are not obvious over Konstantin in view of Bezner.

For these reasons, Claims 14, 15, 90, and 94, and dependent Claims 29-30, 85-87, 91-93, and 95, which incorporate their limitations, are not obvious over Konstantin in view of Bezner.

CLAIMS 44-46, 73, AND 88-89

Applicant has amended Claim 44 to clarify the limitations of the claim. More specifically, amended Claim 44 now recites, in part: (a) "first interlocks on the upstanding inner seam flange facing away from the end wall and configured to interlock with an internal connector"; and (b) "second interlocks on the upstanding outer seam flange facing away from the end wall and configured to interlock with an external connector superimposed over the internal connector." Applicant respectfully submits that Claim 44, as amended, is patentable over Bezner.

As shown in FIGS. 1 and 4, Bezner discloses first and second projections 10 and 12 that have inwardly-directed detent means 16. Both detent means 16 are inwardly-directed in order to interlock with a rail portion 22 of a single joining member 18, which has two outwardly-directed detent means 24 (FIGS. 3 and 4). If the detent means 16 are not both inwardly-directed, the detent means 16 cannot interlock with rail portion 22.

Bezner does not teach or disclose several of the limitations of amended Claim 44. First, as addressed above, Bezner discloses the use of a single joining member 18; it does not disclose the use of an internal connector and an external connector, as recited in Claim 44. Accordingly, Bezner is missing these limitations, and there is no apparent motivation to add another connector to the panel unit of Bezner. In fact, adding another connector would interfere with the stated purpose of reducing the stacking height of the panel unit.

Second, Bezner discloses detent means 16 that interlock in a different manner than the first and second interlocks recited in Claim 44. The detent means 16 of Bezner are inwardly-directed; one faces toward the end wall of the panel and the second faces away from the end wall. In contrast, both the first and second interlocks recited in Claim 44 face in the same direction, *i.e.*, away from the end wall. The detent means 16 of Bezner are oriented differently than the interlocks recited in the Claim because Bezner discloses a different manner of engagement. Both projections 10 and 12 in Bezner are needed to engage the rail portion 44. In contrast, as recited in Claim 44, the inner and outer upstanding seam flanges each separately engage a different connector, *i.e.*, the inner flange engages the internal connector and the outer flange engages the external connector. There is no motivation to modify Bezner so that the detent means 16 are oriented in the same direction because the panel unit of Bezner would not function with detent means 16 oriented in that manner.

Claim 45 requires interlocks with stepped surfaces that are at different heights for the internal connector relative to those for the external connector. One benefit of the

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higher stepped surfaces for the external connector is that these surfaces provide better sealing engagement with the external connector, and therefore better weatherproofing ability, while the lower stepped surfaces for the internal connector provide better retention of the panels by reducing the ability of the system to act as a hinge.

In contrast, Bezner does not disclose stepped surfaces at different heights. Instead, the projections 10 and 12 in Bezner are all at a uniform height, which makes stacking of the panel units (a stated purpose of Bezner) easier. Thus, there would be no motivation to use projections 10 and 12 of different heights because this would interfere with one of the stated purposes of Bezner.

Accordingly, Claims 44 and 45, and dependent Claims 46, 73, and 88-89, are not obvious in view of Bezner.

CONCLUSION

Based on the foregoing, Applicant respectfully requests reconsideration and allowance of Claims 1-12, 14, 15, 25, 29, 30, 44-46, and 73-95. The Commissioner is hereby authorized to charge any additional fees which may be required in this application to Deposit Account No. 06-1135.

Respectfully submitted,

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